



ROLE OF CLINICAL PHARMACIST IN IMPACT OF PATIENT COUNSELLING IN ASTHMATIC PATIENTS

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Journal of Global Trends in Pharmaceutical Sciences

ABSTRACT

A clinical pharmacist role played interventional study was conducted on asthmatic patients through counseling to improve their quality of life. Since asthma effects are sometimes reversible and irreversible, patient education plays a key role in improving quality of life of asthma patients. So 122 asthma affected patients were selected and counseled from day of admission to day of discharge through oral counseling patient information leaflet, pictorial aid and a KAP questionnaire based on their disease condition. 87 patients showed improvement in quality of life since they followed all the instructions given to them by clinical pharmacist. 35 patients did not show much change in their quality of life due to their socio economic status, severity of disease, loss of memory and social habits. Patients who showed improvement in quality of life expressed that if counseling would be provided regularly to patients it will be very much helpful to maintain normal daily activity by improving their quality of life.

Key words: Asthma, KAP questionnaire, quality of life, patient counseling,

INTRODUCTION:

Asthma is one of the oldest common diseases. Asthma is an immune inflammatory disease that needs prolonged treatment.¹ In truth, even today, medicines can only control asthma, not cure it.²

World Health Organisation (WHO) estimates that **300 million** people suffer from asthma.³ **2, 55,000** people died of asthma in 2005 and over **80%** of Asthma deaths are reported from low and lower-middle income countries. In **India**, an estimated **57, 000** deaths were attributed to asthma in 2004 and it was seen as one of the leading cause of morbidity and mortality in rural India. India has an estimated **15-20 million** asthmatics. It is estimated that the number of people with asthma will grow by more than **100 million** by 2025.⁴ The prevalence of asthma has risen in affluent countries over the last 30 years but now appears to have stabilized, with ~10–12% of adults and 15% of children affected by the

disease.⁵

Workplace conditions, such as exposure to fumes, gases or dust, are responsible for 11% of asthma cases worldwide. About 70% of asthmatics also have allergies. Occupational asthma contributes significantly to the global burden of asthma, since the condition accounts for approximately 15% of asthma amongst adults.⁴ Asthma is not just a public health problem for developed countries. In developing countries, however, the incidence of the disease varies greatly.⁵

“Asthma is a chronic disease characterized by recurrent attacks of breathlessness and wheezing, which vary in severity and frequency from person to person. Symptoms may occur several times in a day or week in affected individuals, and for some people become worse during physical activity or at night”.^{6,7} Since asthma is a allergic disease, preventive measures taken by patients plays an important role in improving lifespan and quality of life which can be done more efficiently by clinical pharmacist by providing patient counseling through improving knowledge of patient about

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disease, risk factors, medication management and preventive measures to control asthma.

Pharmacist's communication skills needs to be further developed into a more patient centered approach in order to take greater account of patient's perspectives and experiences in using their medication. Finally, more research is needed to establish a solid evidence base for the impact of pharmacists' education and counseling practice on patients' medication adherence and treatment outcomes.⁸

Action plan for Pharmacist's:

- Educate patients about asthma medications.⁹
- **Identify and avoid asthma triggers.** A number of outdoor allergens and irritants — ranging from pollen and mold to cold air and air pollution — can trigger asthma attacks. Find out what causes or worsens asthma, and take steps to avoid those triggers.¹⁰
- Instruct patients about the proper techniques for inhaling medications.
- Monitor medication use and refill intervals to help identify patients with poorly controlled asthma.⁹
- Encourage patients to seek medical care who are purchasing OTC asthma inhalers or tablets and help patients use peak flow meters appropriately.^{9,10}
- Help patients discharged from the hospital understand their asthma management plan.⁹

There is no cure for asthma but there are many ways to manage it. Always follow your physician's/ clinical pharmacist's instructions and take your prescription medications as directed. By following the above suggestions and taking your medications as needed, you can live a healthy, active lifestyle.

RESEARCH METHODOLOGY:

1. Place of Study:

The study was carried out in General Medicine Department units (IP) of RIMS, Kadapa, a 750 bedded multi-disciplinary tertiary care teaching hospital. The study proposal was approved by Institutional Review Board of PRRMCP Kadapa and was approved (Rc.No.413/Acad./2011-12) by Ethical Committee of RIMS, Kadapa.

2. Period of study: 6- months.

3. Study population: Approximately 150 cases.

4. Study design: An interventional study.

5. Patient enrollment: patients are enrolled in the study based on inclusion and exclusion criteria

a. Inclusion criteria:

Patients of either sex of 18 or above 65 yrs. and who are with history of bronchial asthma and currently diagnosed with bronchial asthma with or without co-morbidities and prescribed with anti-asthmatic medications.

b. Exclusion criteria:

Bronchial asthma patients who are having other pulmonary complications, TB, HIV and any other immunosuppressive disease patients, hepatic and renal disease patients are excluded from the study.

6. Study materials:

A specially designed “**Patient data collection Proforma**”, “**Questionnaire form**” and “**KAP Questionnaire**” was prepared for this study. The questionnaire envisaged for use in this study had 4-components. The first part of the questionnaire was aimed at collecting information about disease knowledge in patient. The second component was aimed at collecting information on past and present medication therapy. The third component was aimed at assessing the patient counseling and life style modification measures undertaken. The fourth part, KAP questionnaire contains 17 questions which measures knowledge attitude and practice of the patients about asthma before and after counseling provided by clinical pharmacist.

7. Method of study:

There are eight units in both female and male medical ward of the general medicine department. The patients who were admitted to the medical units with confirmed diagnosis of bronchial asthma and prescribed with anti-asthmatic medicines were included in the study and followed from the date of admission till date of discharge. The data for the present study was collected by “**Chart Review Method**” which is well suited. All necessary and relevant baseline information were collected on a “**Patient Data Collection Proforma**”. To assess the Knowledge, Attitudes, and Practices (KAP) of the patients towards the disease management, a suitably designed and content of KAP questionnaire was administered on all the enrolled patients before and after interventional study.

The answer knows also considered a “YES” only. The answer do not know also was considered “No” only. The subjects were asked to complete the Proforma containing the questions by themselves, but for illiterate persons the proforma were filled up by asking the questions verbally and recording their answers.

An intervention based study was designed to evaluate the effect of patient counseling in the study population. On an average 20-30 minutes was spent with each patient depending on their educational level and understanding capability. The patient was provided verbal and pictorial information related to disease, risk factors, adherence to treatment and life style modifications.

8. Statistical analysis:

Student T-test was performed to calculate the P-value for the purpose of comparison of results by using software namely “Graph pad prism”.

RESULTS:

A total of 122 asthma diagnosed patients were recruited under the inclusion criteria. Out of 122 patients 79 (64.75%) were male and 43 (35.25%) were females. Majority of 46 (37.70%) patients were found in the age group of 56-65 years, 54 (44.26%) Workers (Brick and cement industry) and 33 (27.04%) cultivators were found. Most of them were illiterate. Out of 122 patients majority 89(72.95%) of them were found to be illiterate when compared with literate 33(27.04%) with Most of them 93(76.225) were living in rural area.

Based on their income, most of them were very poor 56 (45.90%) of earning < 2000rs/- per month, 38(31.14%) were poor of earning 2001-5000rs/-per month, 20(16.34%) were moderate of earning 5001-7000rs/-per month, 7(5.74%) were upper middle class earning 7001-10,000rs/-per month, 1(0.82%) were high class earning >10,100rs/-per month. (Table-1)

Risk factors to be studied based on the information available from the patient data collection proforma and questionnaire which includes the family history, social habits and allergic history. 19.67% had the family history of BA (table2).

Among them smoking and drinking alcohol was present in 41.08% (table 2, figure 1). Out of 122 patients most of them 34(27.87%) were allergic to dust and the followed by dust+ climate 29(23.77 %) (Tab 2, fig 2).

Table 1: Patient distribution based on demographic data:

S. No.	Demographic factors	No. of patients	Percentage
1.	Gender		
	Male	79	64.75%
	Female	43	35.25%
2.	Age (in years)		
	18-25	3	2.45 %
	26-35	6	4.92 %
	36-45	7	5.73 %
	46-55	19	15.57 %
	56-65	46	37.70 %
3.	Occupation		
	House wife	13	10.65 %
	Workers	54	44.26 %
	Business	7	5.74 %
	Agriculture	33	27.04 %
	Textile	3	2.46 %
	Employee	12	9.83%
4.	Educational Status		
	Literate	33	27.04 %
	Illiterate	89	72.95 %
5.	Location		
	Rural	93	76.22 %
	Urban	29	23.77 %
6.	Socio-economic status		
	Very poor	56	45.90 %
	Poor	38	31.14 %
	Moderate	20	16.34 %
	Upper Middle Class	7	5,74 %
	High Class	1	0.82 %

Table 2: Patient distribution based on risk factors

S. No.	Risk factors	No. of Patients	Percentage (%)	
1.	Family History			
	Yes	24	19.67 %	
	No	98	80.32 %	
2.	Social Habbits			
	Smoking	27	22.13 %	
	Drinking Alcohol	5	4.10 %	
	Cooking With Sticks	15	12.30 %	
	Chewing Tobacco	3	2.46 %	
	Betal nut Chewer	4	3.28 %	
	Smoking + Drinking Alcohol	50	41.08 %	
	None	18	14.75 %	
	4.	Allergy History		
		Dust	34	27.87 %
Pollution		3	2.46 %	
Climate		18	14.75 %	
Animal Dander (cat)		2	1.64 %	
Dust+Polution		6	4.92 %	
Dust+Climate		29	23.77 %	
Dust+Polution+Climate		16	13.11 %	
Polution+Climate	8	6.56 %		
Others(GERD, medicines)	4	3.28 %		
Nil	2	1.64 %		

Figure 1: Patient distribution based on habbits

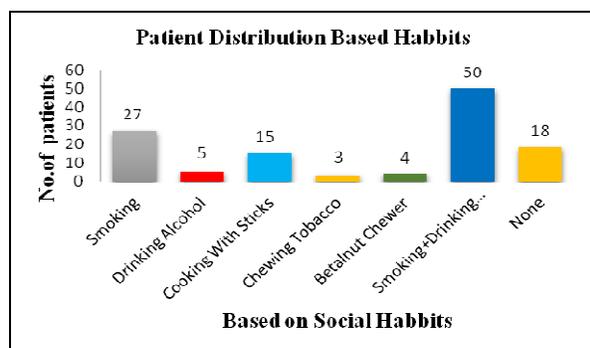
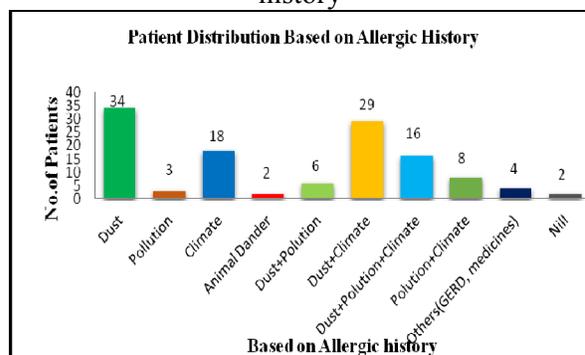


Figure 2: Patient distribution based on allergic history



Assessment of Patient Counseling by Using KAP Questionnaire:

As there is no cure for asthma, the key instrument is to educating the people about asthma. Patient Education was found to be key variable in assessing the knowledge of disease in patients. It has been observed that most of the individuals do not have correct and complete information about asthma and its control. Patient counseling has become a corner stone for pharmaceutical care and improves patients quality of life.

The knowledge of the patients about the asthma was assessed at baseline and after counseling with structured KAP questionnaire containing 17 questions related to disease, causative factors, medications and life style modifications. At the end of the study it was found that there was an improvement in knowledge about asthma in patients and results are shown in table-3, figure-3 with p-value<0.0001(< 0.05 is statically significant)

Figure 3 Assessment of Patient Counseling by Using KAP Questionnaire

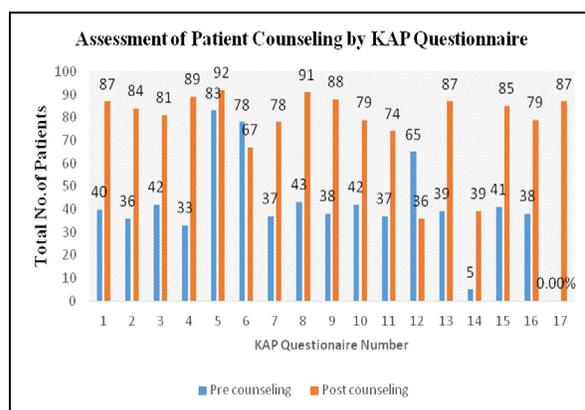


Table 3: Assessment of Patient Counseling by KAP Questionnaire

S. No	KAP Questionnaire	Pre Counseling		Post Counseling		Total No. Of Patients	P – Value
		Yes (%)	No (%)	Yes (%)	No (%)		
1	Do you know what asthma is?	40 (32.79%)	82 (67.21%)	87 (71.31%)	35 (28.69%)	122	<0.0001
2	Do you know trigger factors of asthma (smoke, dust, animal dander, cold items)?	36 (29.51%)	86 (70.49%)	84 (68.85%)	38 (31.15%)	122	
3	Do you know which kind of food causes asthma (sea food, high fat, fiber containing foods)?	42 (34.43%)	80 (65.57%)	81 (66.39%)	41 (33.61%)	122	
4	Are you keeping house clean and dust free?	33 (27.05%)	89 (72.95%)	89 (72.95%)	33 (27.05%)	122	
5	Are you washing clothes and pillows regularly?	83 (68.03%)	39 (31.97%)	92 (75.45%)	30 (24.59%)	122	
6	Do you have any other co-morbid diseases (COPD, HTN and DM)?	78 (63.93%)	44 (36.07%)	67 (54.92%)	55 (45.08%)	122	
7	Are you visiting physician for regular checkups?	37 (30.33%)	85 (69.67%)	78 (63.93%)	44 (27.87%)	122	
8	Are you using medicines regularly?	43 (35.25%)	79 (64.75%)	91 (74.59%)	31 (25.41%)	122	
9	Do you know the importance of medication adherence to control asthma?	38 (31.15%)	84 (68.85%)	88 (72.13%)	34 (27.87%)	122	
10	Do you know complication of missing dose?	42 (34.43%)	80 (65.57%)	79 (64.75%)	43 (35.25%)	122	
11	Do you know how to use inhalers?	37 (30.33%)	85 (69.67%)	74 (60.65%)	57 (46.72%)	122	
12	Do you have any difficulty in using inhalers?	65 (53.28%)	43 (35.25%)	36 (29.51%)	86 (70.59%)	122	
13	Are you following precautions given by physician (wearing mask, diet restriction)?	39 (31.97%)	83 (68.03%)	87 (71.31%)	35 (28.69%)	122	
14	Are you doing regular exercises to reduce asthma attacks (yoga, meditation)?	5 (4.10%)	117 (95.90%)	39 (31.98%)	83 (68.03%)	122	
15	Are you drinking warm water daily before sleep?	41 (33.65%)	82 (67.21%)	85 (69.67%)	37 (30.33%)	122	
16	Do you know benefits of life style modifications?	38 (31.15%)	84 (68.85%)	79 (64.75%)	43 (35.25%)	122	
17	Was the patient counseling provided by clinical pharmacist helpful to improve your quality of life?	----	----	87 (71.31%)	35 (28.69%)	122	

DISCUSSION:

Asthma is one of the diseases with large number of people affected around the world, even in India; 300 million people worldwide were affected by asthma.⁴ The global prevalence of asthma ranges from 1-18% of the population in different countries.³ Our study found that the prevalence of bronchial asthma was more in males 79 (64.75%) than in females 43 (35.25%) which is supported by Mohammed Alharbia et al study¹¹. As per our study it was found that the predominant risk factors for Asthma in kadapa region are dust (27.87%), dust+climate (23.77%) and climate variation (14.75%) which showed similarity with the study conducted by kabila et, al.³ that resulted as dust was predominant factor and supported our study.

Patient counseling is one of the most important aspect in developing patients knowledge about disease, management, precautions and improving over-all quality of life. Even our study revealed that majority of patients had lack of knowledge about disease, precautions and management before counseling. After counseling, the patients knowledge was assessed based on KAP Questionnaire and results showed that most patients knowledge improved regarding disease, risk factors, management precautions and some patients didn't show any response to counseling due to their socio-economic status, age, loss of memory, severity of disease. Tarique hakim et al conducted a study on "*knowledge, attitude and behavior of asthmatic patients regarding asthma in urban areas in Khartoum state, Sudan*"¹² which resulted that most patients after the study were reluctant to accept as asthmatic rather considered themselves as Allergic due to poor knowledge about disease and this study supported our study which showed similar kind of results.

Many patients also conveyed their thankfulness for providing patient counseling which improved their quality of life and knowledge about disease.

CONCLUSION:

Greater understanding about the illness and a change in attitude and practice would in turn results in a better therapeutic outcome. Our study found that most of the patients had lack of knowledge about disease, risk factors and preventive measures to be taken during disease which leads to decreased quality of life and

improvement in severity of disease before counseling by clinical pharmacist.

Our study concluded that Most patient's knowledge about disease, preventive measures and risk factors improved after counseling whereas few elderly were not able to improve their quality of life due to poor memory, poor socio economic status in such states counseling was given to patient's representative but there was only little change due to their severity of disease.

ACKNOWLEDGEMENTS:

We thank all the family members, faculty of our college, hospital staff, ethics committee, friends and patients who supported us in completion of the study.

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Medical Journal (2011)- vol.04No.:1-
Page No.:524-531

***“EFFECTIVE ASTHMA TREATMENT
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